

HOW RESEARCH FUNDING ORGANIZATIONS CAN INCREASE APPLICATION OF SCIENCE TO DECISION-MAKING: A CASE STUDY

Each year, the National Oceanic and Atmospheric Administration (NOAA) invests millions of dollars in science to address ocean and coastal resource management problems through the mechanism of competitive funding programs.

A paper published in the *Journal of Coastal Management* (2011 Volume 39, Issue 3) presents the case study of one such program's efforts to determine if the research it funded was being used, and whether the program's administrative processes had influenced that use.

The study's findings carry important implications for applied science funding organizations and scientists, especially those who hope to impact natural resource management issues.

Methods

The study focused on the Cooperative Institute for Coastal and Estuarine Environmental Technology (CICEET), a partnership of NOAA and the University of New Hampshire (UNH). CICEET was created in 1997 to develop tools to address the negative impacts of pollution and habitat degradation on the coast through the mechanism of competitive funding.

In 2009, staff from NOAA's Estuarine Reserve Division and CICEET began to collect data from past project principal investigators (PIs) and intended users of their science through surveys, interviews, and progress reports. They contacted 116 PIs, with 69 responses, and 20 intended users, with 17 responses. All were asked if and why the science CICEET funded was used, and what a funding organization could do to increase the likelihood that science is used.

They also conducted an internal focus group that looked at how CICEET's administrative model contributed to the program's ability to select research projects with a higher likelihood of results being used.

Summary of Results

The study focused on four key questions; findings related to these questions are presented below. For more information, see "How Research Funding Organizations can Increase Application of Science to Decision-Making," at <http://www.informaworld.com/smpp/content~db=all~content=a936685718~frm=titlelink>

1. Is the science being used?

- For projects that began between 1997 and 2006, the data indicated an application rate of at least 33 percent, with many PIs on projects funded in 2005 and 2006 saying it was "too soon to tell."
- Although terms like "application" or "use of science" were defined in the study, respondents interpreted them broadly along a continuum that extended from awareness of a research project to its having a significant impact on an agency's ability to manage a resource. This finding underscored the need for funding organizations to be explicit about how they define science application, to use this definition as a foundation for clear organizational goals, and then be prepared to administer resource allocation, business practices, and evaluation techniques in support of reaching them.

2. What factors increased the likelihood that a research project's results were used?

- Projects with the most impact had the most involvement with intended users.
- Projects that took steps to insure that the proposed research was relevant to its intended users and their contexts increased the likelihood that the science would be used.
- Demonstrating the applicability of knowledge or technology in a particular region or context increased the trust of intended users and its use.

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Summary of Results Continued

3. Can funders increase the likelihood of science application?

- Yes, but resources to do this—whether administered at the program level or funded through an RFP—are likely required. Simply asking PIs to connect their work to intended users did not increase actual use science.
- Respondents felt that connecting the research process to intended users of the science is important, but neither scientists nor users felt that this was their job.
- Many respondents felt that a longer time frame than the typical two-year research grant is needed to get end users sufficiently involved in the project.

4. Did the program's use of planning and evaluation tools support the application of the science it funded?

CICEET used a suite of planning and evaluation tools—strategic plans, logic models, action planning, performance metrics, and evaluation research—as a means to focus resources, inform decisions, and manage projects toward a shared goal of funding research that gets used. An internal evaluation of the use of these tools yielded the following lessons learned:

- Develop a few clear, consensual goals that are critical to the organization; then use planning and evaluation tools to identify decision points to get there;
- Use tools that make sense for the decisions that need to be made and the way individual staff make decisions;
- Acknowledge that everyone in the organization may use tools for different purposes, and want information in different formats;
- Understand how those outside the organization will use these tools and data, but do not confuse this with what's needed to implement the program;
- Agree what critical information is needed at the program or organizational level, and leave the remaining data collection to project manager discretion;
- Think about balance: too much time planning and evaluating means less time for doing the work.

What's Next?

CICEET's funding was discontinued in 2009; but there are still several open projects that will be completed by August 2012. Information about end user involvement and application will be collected and analyzed to supplement what we learned from our original findings.

Many of the staff at UNH that are involved in CICEET are a part of a new funding program called the National Estuarine Research Reserves Science Collaborative. This new program is using the lessons learned by CICEET to develop requests for proposals, interact with project teams, and adaptively manage their staff and resources.

To learn more about CICEET or the NERRS Science Collaborative, contact:

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